

ABSTRACT OF THE DISCLOSURE

In a system having independently-clocked job-performing circuits (e.g., payload processors) and independently-clocked job-ordering circuits (e.g., request and payload suppliers), coordinating mechanisms are provided for coordinating exchanges between the independently-clocked circuits. The coordinating mechanisms include those that use transmitted time-stamps for scheduling contention-free performances within the job-performing circuits of requested jobs. The coordinating mechanisms additionally or alternatively include static and dynamic rate constraining means that are configured to prevent a faster-clocked one of the independently-clocked circuits from overwhelming a more slowly-clocked other of the independently-clocked circuits. In one implementation, independently-clocked telecommunication-shelves house a distributed set of line cards and switch cards. An asynchronous interconnect is provided between the independently-clocked shelves for carrying job requests and payload data between the distributed line cards and the distributed switch cards. The multi-shelf system is scalable and robust because additional or replacement line and switch cards may be inserted into one or another of the independently-clocked shelves as desired and because a unified clock-tree is not needed for synchronizing activities within the interconnected, but independently clocked shelves.